Abstract

The importance of good Indoor Air Quality (IAQ) has gained recognition over the years. From homes to individual workplaces, IAQ audits and assessments have been performed. Overseas studies have moved on to childcare centres and the impact of poor IAQ on children’s health is emphasised.

This research is a pilot study looking into the aspects of IAQ of childcare centres in Singapore. Three centres, each representing one type of ventilating environment are randomly selected. These include a fully air conditioned centre within a commercial building, a naturally ventilated centre and a mixed ventilated centre. They are located in the western, the central and the eastern parts of Singapore respectively. Both objective and subjective data are collected.

Objective data collected showed that the air conditioned centre provided a better environment in terms of thermal comfort (temperature and relative humidity). However, in terms of carbon dioxide level and total bacteria levels, it may not be as ideal compared to its counterparts. Mean CO$_2$ level exceeds 1000 ppm and total bacteria counts exceed 500 cfu m$^{-3}$. Except for “flu-like” symptoms, none of the symptoms are significantly related to a higher CO$_2$ level. The number of symptoms experienced by two groups of respondents (belonging to different ranges of the particular objective data tested) did not differ significantly. When the parameters exceeded the recommended limits/ ranges, the number of symptoms did not differ significantly.

Keywords: Indoor air quality, childcare centre